WHAT IS CLAIMED IS:

1. A coordinate rotation digital computer (CORDIC) circuit, comprising:

a buffer memory to record a plurality or a plurality of group of coordinate values;

a phase selector to determine a rotation direction according to values recorded in said buffer memory;

a rotation calculator to rotate an input coordinate for a predetermined angle and to calculate resulting coordinate value after such rotation;

a rotation counter to count number of rotation being made to said input coordinate; and

an angle accumulator to accumulate total rotation angle being made to said input coordinate according to value recorded by said rotation counter.

2. The CORDIC circuit according to claim 1, further comprising a bit selector to shift bits of said input coordinate.

3. The CORDIC circuit according to claim 1 or 2, wherein said rotation calculator rotates a coordinate at the angle of $\pm\frac{\pi}{4\times 2^n}$, wherein n represents number of rotation and direction thereof is determined by said phase selector.

4. The CORDIC circuit according claim 1 or 2, wherein said phase selector determines direction of rotation according to the positive- or negative-value of said input coordinate.

5. The CORDIC circuit according to claim 1 or 2, wherein said rotation calculator calculates resulted coordinate value of a rotation according to the following equations:

$$x_{i+1} = x_i - \mu_i y_i 2^{-1}$$
$$y_{i+1} = y_i + \mu_i x_i 2^{-1}$$

wherein x_0, y_0 represent input coordinate, x_{i+1}, y_{i+1} represent coordinate after the i+1th rotation, $\mu_i = \text{sign}(x_i * y_i)$, i represents number of rotation.

6. Method of using a CORDIC circuit to calculate angle of a vector, comprising the following steps:

a. obtaining an input coordinate;

b. determining a rotation direction according to said input coordinate;

c. rotating said input coordinate for a predetermined angle to said determined rotation direction to obtain a new coordinate;

d. recording said rotation;

e. comparing number of rotation being recorded with a threshold value; if said number of rotation is smaller than said threshold value, steps b to e are repeated; otherwise

f. accumulate total rotation angle; and

g. output said total rotation angle and said new coordinate.

7. Method of using a CORDIC circuit to calculate angle of a vector, comprising:

a. obtaining an input coordinate;

b. determining a rotation direction according to said input coordinate;

c. rotating said input coordinate for a predetermined angle to said determined rotation direction to obtain a new coordinate;

d. recording said rotation;

e. accumulating total rotation angle;

f. comparing said total rotation angle with a threshold value;

g. if difference between said total rotation angle and aid threshold value is greater than a predetermined value, repeating steps (b) to (f); otherwise

h. outputting said total rotation angle and said new coordinate.

8. The method according to claim 6 or 7, further comprising a step of shifting bits of said input coordinate.

9. The method according to claim 6 or 7, wherein said rotation of a predetermined angle comprising rotating said input coordinate at the angle of $\pm\frac{\pi}{4\times 2^{n}}$, wherein n represents number of rotation and direction thereof is determined by said phase selector.

10. The method according claim 6 or 7, wherein determination of rotation direction is made according to the positive- or negative-value of said input coordinate.

11. The method according to claim 6 or 7, wherein said rotation of a predetermined angle comprising calculation of coordinate after rotation according to the following equations:

$$x_{i+1} = x_i - \mu_i y_i 2^{-1}$$
$$y_{i+1} = y_i + \mu_i x_i 2^{-1}$$

wherein x_0, y_0 represent input coordinate, x_{i+1}, y_{i+1} represent coordinate after the i+1th rotation, $\mu_i = \text{sign}(x_i * y_i)$, i represents number of rotation.